



MARKED-UP VERSION OF THE AMENDMENTS

The paragraph beginning at page 16, line 6 has been replaced with the following rewritten paragraph:

The invention further provides a catalytic process comprising passage of at least one reactant into a reaction chamber comprising the inventive catalyst, conversion of said at least one reactant into at least one product, and passage of the product out of the reaction chamber. In a preferred embodiment, the catalytic process is conducted in an apparatus having microchannels. Microchannels have at least one dimension of about 1 mm or less. Examples of suitable microchannel apparatus and various process related factors are described in U.S. Patents Nos. 5,611,214, 5,811,062, 5,534,328, 6,488,838, 6,451,864, 6,200,536, 6,479,428, 6,440,895, 6,129,973, and 6192,596 and U.S. Patent Applications Ser. Nos. 08/883,643, 08/938,228, 09/375,610, 09/123,781, cofiled U.S. patent application serial no. _____ (attorney docket no. E-1666A-CIP), 09/375,614 (filed Aug. 17, 1999) and 09/265,227 (filed Mar. 8, 1999), all of which are incorporated by reference as if reproduced in full below. In another preferred embodiment, the catalyst is a monolith - a single contiguous, yet porous, piece of catalyst or several contiguous pieces that are stacked together (not a bed of packed powder or pellets or a coating on the wall of a microchannel) that can easily be inserted and extracted from a reaction chamber. The piece or stack of catalyst pieces preferably have a width of 0.1 mm to about 2 cm, with a preferred thickness of less than 1 cm, more preferably, about 1 to about 3 mm. The inventive catalyst may provide numerous advantages to catalytic processes such as: chemical stability, stability to repeated thermal cycling, thermal stability, efficient loading and unloading of catalysts, high rates of heat transfer and mass transfer, and maintenance of desired catalytic activity.

Claim 48 has been amended as follows:

48. A method for suppressing formation of at least one undesirable chemical reaction product in a thermal chemical reaction, comprising:
 passing at least one reactant into at least one reaction chamber;
 said reaction chamber comprising a porous catalyst that catalyzes the reaction of said at least one reactant;
 transferring heat to or from said at least one reaction chamber from or into at least one heat exchanger;
 obtaining at least one product from said reaction chamber; and
 at steady-state, transferring at least 0.6 W of heat per cc of total reactor volume, such that, at steady state, the catalyst is maintained within a temperature range that reduces the formation of at least one undesirable chemical reaction product; and
 maintaining a contact time of the reactant at less than 0.01 seconds,

thereby suppressing slow reactions and reducing the formation of at least one undesirable chemical reaction products;

wherein said porous catalyst comprises a metal support.

New claims 49-71 have been added.